

REMARKS

Claims 1-9 are pending. By this Amendment, Claims 1, 2, 4-6, and 8-9 are amended. Support for the amendment to claim 1 can be found, for example, in original claim 4 and paragraph [0023]. Support for the amendment to claim 4 can be found, for example, in paragraph [0026]. Support for the amendment to claim 8 can be found, for example, in paragraph [0029]. No new matter has been added by these amendments.

Claim Objections

In the Office Action the Examiner objects to Claims 1 and 8. Applicant respectfully submits that Claims 1 and 8 as amended obviate the objection. Withdrawal of the objection is respectfully requested.

Rejection under 35 U.S.C. § 112

In the Office Action, the Examiner rejects Claim 6 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 has been amended to remove the term "usable". Thus, withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. § 102(b)

In the Office Action, the Examiner rejects Claims 1, 2, 7 and 8 under 35 U.S.C. § 102(b) as being anticipated by Jones (U.S. Pat. 5,114,745). According to the Examiner, Jones teaches a method of producing a diamond film having a desired profile by forming a substrate coated with a carbide layer and removing the substrate via etch after formation of the diamond layer by CVD.

Applicants respectfully traverse. As amended, claim 1 includes a step of pretreating the matrix by using diamond powder agents in an ultra-sonic bath to incite nucleation of diamond on the matrix while blocking a zone on the surface of the matrix from the diamond powder agents.

Additionally, the a diamond/matrix composite of amended claim 1 is partially uncoated with the diamond film and has an opening site corresponding to the zone on the surface blocked from the diamond powder agents. In contrast, Jones teaches neither pretreating the matrix nor forming a diamond/matrix composite that is partially uncoated with the diamond film to have an opening site. According to Jones, a diamond film having a hemisphere shape can be obtained. However, a hollow diamond shell can not be obtained since the diamond/matrix composite does not have an opening site.

Claims 2 and 7 directly depend from claim 1 and contain all the limitations of claim 1. Thus, for the reasons provided above, claims 2 and 7 are not anticipated by Jones.

Similarly, Jones does not teach synthesizing diamond particles on the matrix by CVD process to form a diamond/matrix composite, and then stopping the diamond deposition before film formation as in amended claim 8. Accordingly, Jones does not teach or suggest the method of fabricating the diamond particles of claim 8.

Thus, applicants respectfully request that the rejection of claims 1, 2, 7, and 8 over Jones be withdrawn.

In the Office Action, the Examiner rejects Claims 1, 2, and 6 - 9 under 35 U.S.C. § 102(b) as being anticipated by Kley (U.S. Pat. 7,309,446). Kley was first published on December 18, 2007. The PCT filing date of the present invention is October 19, 2005. Thus, Kley is not available under 35 U.S.C. § 102(b) since it was not published more than one year prior to the date of the application for patent in the U.S.

Similarly, Kley is not available under §§102(a) and/or 102(e). As provided in the attached Declaration under 37 CFR § 1.131, signed by inventors Lee and John, the invention was conceived prior to the earliest filing date to which Kley is entitled (*see* Paras. 2 - 4 and Exhibit 1). Further, the inventors and their representatives diligently worked on reducing this invention to practice from the date of conception until the invention was constructively reduced to practice

by filing of the Korean priority application on Oct. 19, 2004, as established in the Lee and John Declaration Para. 5 and Exhibits 2 – 10.

Thus, applicants respectfully request withdrawal of the rejection of claims 1, 2, and 6 - 9 over Kley.

Rejections under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejects Claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Kley (U.S. Pat. 7,309,446) in view of Pope (U.S. Pat. Appl. No. 2004/01992620) since Pope purportedly teaches vibrating or rotating a diamond coating during CVD.

As discussed above, Kley is not available as prior art, thus, this rejection is believed to be overcome.

Independently, and without conceding the Kley is available as prior art under any provisions of 35 U.S.C. § 102 or 103, this rejection is also traversed since neither Kley nor Pope teaches pretreating the matrix by using diamond powder agents in an ultra-sonic bath to incite nucleation of diamond on the matrix while blocking a zone on the surface of the matrix from the diamond powder agents.

Thus, applicants respectfully request that the rejection of claim 3 over Kley in view of Pope be withdrawn.

In the Office Action, the Examiner rejects Claims 4-5 under 35 U.S.C. § 103(a) as being unpatentable over Kley (U.S. Pat. 7,309,446) in view of Linares (U.S. Pat. Appl. No. 2003/0205190). Since the limitations of original claim 4 have been incorporated into claim 1, this rejection is discussed in view of claims 1 and 5 as currently pending. According to the Examiner, Linares teaches using diamond powder agitated in an ultrasonic bath to enhance nucleation of diamond and Kley purportedly teaches using “carbon dag” to hold the substrate

onto a pedestal and create a diamond shell with an opening corresponding to the shape of the pedestal surface. This rejection is respectfully traversed.

As discussed above, Kley is not available as prior art, thus, this rejection is believed to be overcome.

Independently, and without conceding the Kley is available as prior art under any provisions of 35 U.S.C. § 102 or 103, this rejection is also traversed since Linares, which teaches pretreating (i.e., pre-abrasion) of the substrate but does not teach “pretreating the matrix while blocking a zone on the surface of the matrix” (i.e., the selectively pretreating the substrate) at recited in claim 1 as amended. Therefore, the opening site are not taught by Linares and, accordingly, a hollow shell can not be obtained by following the methods taught by Linares as combined with Kley.

Thus, applicants respectfully request that the rejection over Kley in view of Linares be withdrawn.

CONCLUSION

Applicant respectfully submits that the application is in condition for allowance. Favorable consideration on the merits and prompt allowance are respectfully requested. In the event any questions arise regarding this communication or the application in general, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

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Respectfully submitted,

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